

REMARKS

The rejections and comments of the Examiner set forth in the Office Action dated September 4, 2003 have been carefully reviewed by the Applicant.

Claims 1, 10, 17, 2, 3, 4, 5, 11, 12, 18, and 19 are currently rejected under 35 U.S.C. 102(b) as being anticipated by Maughmer (US 4318300). The Applicant respectfully traverses the rejection on the grounds that Maughmer fails to teach or suggest every element of the invention as claimed Claims 1, 10, 17, 2, 3, 4, 5, 11, 12, 18, and 19.

Regarding Claim 1, the rejection holds that Maughmer teaches:

b) spinning a multi-axis accelerometer device around an axis of rotation at an angular velocity using the turn table such that the multi-axis accelerometer device experiences a time varying component of the local gravity vector;

c) receiving respective outputs of the multiple axis as the multi-axis accelerometer device experiences the time varying component of the local gravity vector;

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Maughmer does not teach spinning a multi-axis accelerometer around an axis to produce an output that is received by a process or processor. As taught in the Abstract of Maughmer, Figures 2A and 2B, and described in the detailed description of the invention, Maughmer teaches rotating the turntable between fixed positions, and making measurements at the fixed positions. See column 2, line 64 to column 3, line 48.

Maughmer does not teach or suggest receiving an output from the accelerometer while the turntable is rotating at an angular velocity. Since Maughmer does not teach or suggest receiving the output of the accelerometer device while spinning, Maughmer does not teach or suggest using the output to determine scale factors or alignment angles. The only accelerometer output used by Maughmer is that obtained when the turntable is "positioned," that is, not rotating. Maughmer specifically teaches two measurements at 0 and 180 degrees. Thus, Claim 1 is patentably distinguished from Maughmer.

Regarding Claim 10, the rejection holds that Maughmer teaches:

a turn table mechanism configured to mount an accelerometer device having multiple axis for calibration, the turntable having a tilt angle with respect to a vertical axis defined by a local gravity vector, the turntable configured to spin the accelerometer device around an axis of rotation at an angular velocity such that the accelerometer device experiences time varying components of the local gravity vector; and

a processor system coupled to receive respective outputs of the multiple sensitive axes of the accelerometer device, the processor system configured to record the outputs of the accelerometer device as the device experiences the time varying components of the local gravity vector and to determine respective scale factors or alignment angles of the multiple axis of the accelerometer device by combining the logged outputs of the accelerometer device with a predicted output of an ideal accelerometer, the predicted output based on the tilt angle of the turntable, the angular velocity of the ideal accelerometer and the local gravity vector.

As explained above, the system of Maughmer does not receive an accelerometer output while the turntable is rotating, and thus does not determine scale factors or alignment angles based upon the angular velocity of the accelerometer. Thus Claim 10 is patentably distinguished from Maughmer.

Regarding Claim 17, the rejection holds that Maughmer teaches:

b) spinning a multi-axis accelerometer device around an axis of rotation at an angular velocity using the turn table such that the multi-axis accelerometer device experiences a time varying component of the local gravity vector;

c) receiving respective outputs of the multiple axis as the multi-axis accelerometer device experiences the time varying component of the local gravity vector;

d) determining respective scale factors or alignment angles of the multiple axes of the accelerometer device by combining the respective received outputs of the accelerometer device with predicted outputs of an ideal accelerometer, the predicted outputs based on the tilt angle of the turntable, the angular velocity of the ideal accelerometer, and the local gravity vector.

As explained above, the system of Maughmer does not receive an accelerometer output while the turntable is rotating, and thus does not determine scale factors or alignment angles based upon the angular velocity of the accelerometer. Thus Claim 17 is patentably distinguished from Maughmer.

Claims 5-18 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maughmer (US 4318300) in view of Horton et al. (US 6421622). The Applicant respectfully traverses the rejection on the grounds that Maughmer fails to teach or suggest every element of the invention as discussed above, and Horton fails to remedy the previously described defect of Maughmer.

The Applicant directs the Examiner's attention to Figure 1 of Maughmer. As shown, the turntable of Maughmer has a gear drive 34 at its periphery. Such a gear drive 34 is poorly suited to achieving a useful magnitude of angular velocity. As described above, Maughmer is not concerned with the angular velocity of the turntable, but is concerned only with the angular position. The teaching of Maughmer with respect to measurement is limited to the use of a turntable that is in a fixed position. Maughmer does not take measurements while rotating the turntable.

Maughmer teaches two detents 36 and 38 and a roller 42. One with normal skill in the art would recognize that if one attempted to "spin" the turntable at any appreciable angular velocity, the interaction between the roller 42 and the detents 36 and 38 would induce undesirable perturbations in the angular velocity, and perhaps damage the equipment. Removal of the detents would render the system shown in Figure 1 unsuitable for its intended purpose, since the detents are required for accurate positioning, as taught by Maughmer.

Not only does Maughmer fail to teach or suggest the invention as claimed in Claims 1-19, the modification to the system of

Maughmer required for operation in accordance with the present invention would render Maughmer unsuited for its intended purpose.


In summary, Applicant asserts that Claims 1-19 are in condition for allowance and earnestly solicits such action by the Examiner.

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Respectfully submitted,

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